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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,494	04/01/2004	Guy F. Hudson	500155.05	2322

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EXAMINER

VINH, LAN

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 12/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/817,494	<b>Applicant(s)</b> HUDSON, GUY F.	
	<b>Examiner</b> Lan Vinh	<b>Art Unit</b> 1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 31, 38 and 75-106 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 31, 38, 75-79, 86-95, 99-106 is/are rejected.
- 7) ☒ Claim(s) 80-85 and 96-98 is/are objected to.
- 8) ☒ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/13/05</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 100-107 been renumbered 99-106

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 99-101 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 99 is indefinite because it depends on itself. Claims 100-101 are indefinite because they depend on claim 99

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 31, 38, 75-79, 86-87, 91-95, 102-103 are rejected under 35 U.S.C. 102(e) as being anticipated by Iida et al (US 6,126,531)

Iida discloses a method for recycling a slurry comprises the steps of:

filtering a first solution S by passing the slurry S through filter 5 to remove selected particles from the slurry, the slurry S containing a plurality of abrasive particles (col 5, lines 1-5), which reads on filtering a first solution having a plurality of first abrasive particles to create a treated flow of the first solution

generating a new slurry S' /second solution containing a high concentration flow of second abrasive particles (col 7, lines 46-48), the first abrasive/silica particles are different from the second abrasive/alumina particles (col 7, lines 6-8)

flowing/combining the filtered/treated flow of the slurry S/first solution and the flow of slurry S'/second solution into a tank 60 to create a single flow of an abrasive slurry having the first distribution of abrasive particles and the second distribution of the second abrasive particles (col 7, lines 45-50; fig. 6)

dispensing the abrasive slurry onto a planarizing surface of a polishing pad (col 8, lines 54-58; fig. 6)

removing material from a wafer/substrate assembly by pressing the wafer against the planarizing surface and moving at least one of the substrate assembly and the polishing pad with respect to the other to translate the substrate assembly across the planarizing surface (col 4, lines 5-10)

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Regarding claims 75-77, 91-93, lida discloses that the first abrasive particles have a first size 10 microns and the second abrasive having a second size 0.35 microns (col 4, lines 30-32; col 6, lines 63-64), using the filter to filter out selected particles size from the slurry (col 5, lines 1-5)

Regarding claims 78-79, 94-95, lida discloses using the filter to filter out particles size of over 10 microns>0.3/0.8 microns from the slurry (col 5, lines 3-5)

Regarding claims 86, 102, lida discloses the step of stirring the filtered/treated slurry with the stirrer (col 8, lines 12-18; fig 6), which reads on agitating the first and second solution in a mixing unit

Regarding claims 87, 103, lida discloses passing the filtered slurry through ultrasonic wave/turbulent zone (col 6, lines 46-53)

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 88-90, 104-106 are rejected under 35 U.S.C. 103(a) as being unpatentable over lida et al (US 6, 6,126,531) in view of Kimura (US 5,869,392)

lida's method has been described above. Unlike the instant claimed inventions as per claims 88-90, 104-106, lida does not specifically disclose mixing/changing the volume ratio/concentration of the first and the second solution/slurry.

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However, Kimura, in a method of fabricating semiconductor device, teaches that concentration of the slurry is a polishing variable (col 4, lines 1 1-15)

Hence, one skilled in the art would have found it obvious to modify Iida's method by Mixing/changing the ratio concentration of the first and second solution to discover the optimum value for concentration/volume ratio because Kimura discloses that the concentration is a polishing variable in the same field of endeavor.

### ***Allowable Subject Matter***

5. Claims 80-85, 96-98 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 80, 96, the cited prior art of record fails to disclose or suggest a method of planarizing microelectronic device substrate comprises the step of separating a second type of selected abrasive particles from the second abrasive particles of the second solution to create a treated flow of the second solution, the filtered flow of the second solution being combined with the filtered flow of the first solution to create the single flow of the abrasive slurry prior to combining the first filtered flow of the first solution with the flow of the second solution, in combination with the rest of the claimed steps/limitations of claims 80, 96

### ***Conclusion***

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lan Vinh whose telephone number is 571 272 1471.

The examiner can normally be reached on M-F 8:30-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571 272 1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



LV

December 1, 2005